

SD Times

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ROGUE WAVE CEO STEPS DOWN

Chairman claims company needs to branch out

BY CHRISTINA M. PURPI

At the behest of the Rogue Wave Software Inc. board of directors, president and chief executive Jack Iacobucci last month stepped down from those positions, as the company seeks to branch out from the component market, according to Thomas Keffer, chairman of the board.

John Floisand, member of the board of directors and former CEO of recruitment software vendor Personix Inc., will serve as acting chief executive officer and assist in the search for a permanent CEO, which is expected to take roughly six months, according to the company.



CEO Iacobucci was asked to resign his posts.

Keffer declined to comment on specific reasons behind Iacobucci's departure. He did say, "The software component market is changing, and we need to change with it. We need to branch out."

In its search for a new CEO, according to Keffer, the company is looking for someone who possesses a coherent vision, the leadership qualities to take that vision and make it happen, an understanding of the technology market, and the ability to pursue and capitalize on strategic partnerships with industry leaders.

Keffer said the move to

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Sun Rises On J2EE 1.3 Specification

Claims new Connectors, messaging will tighten integration, ease assets to Web

BY DAVID RUBINSTEIN

The long-awaited Java 2 Enterprise Edition 1.3 specification was finalized late last month, with the message for developers that integration is stronger with the addition of the J2EE Connectors spec and the mandatory Java Message Service API as well as stronger support for XML.

"This will help people who must bring what [assets] they have to the Web," said Ralph Galantine, Sun's product line manager for J2EE. "It will be important for developers to learn the Connectors, learn the architecture." The specification can be viewed and downloaded from <http://java.sun.com/j2ee>.

Galantine said Sun intentionally kept the J2EE announcement low key to give vendors a chance to implement the new specification in their products. "I'm sure you'll start to see prod-

ucts pretty quickly," he said. "Vendors have had [compatibility] tests in various forms since the beta release in February." Interestingly, Sun's newly released Forte for Java 3.0 development environment does not yet support EJB 2.0 or J2EE 1.3.

Sun also announced that integration solution vendor TIBCO Software Inc. has licensed J2EE, bringing the number of licensees to 34. "This is the real industry strength," Galantine said.

Little has changed in the 1.3 specification since it was originally outlined in October of last year, with the exception of the EJB 2.0 specification. "The proposed [EJB] spec was something that the community was not happy with," said Judith Lilienfeld, Sun's senior product manager for J2EE compatibility, without going into specifics. "It

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Merant Adds Content Manager to PVCS Brand

Sells off data connectivity division to focus on ECM solutions

BY DAVID RUBINSTEIN

With last month's shedding of the second of what had been three divisions, Merant International Ltd. has placed all of its eggs in the enterprise content management basket. First to hatch is a new Web content management tool, now labeled under Merant's PVCS brand.

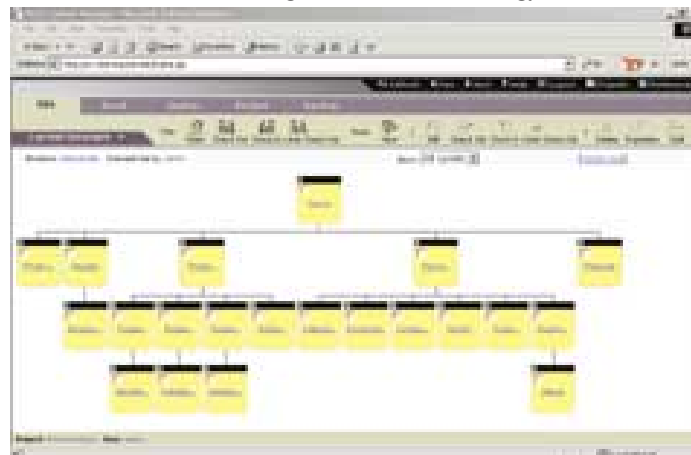
Following closely on the heels of the August sale of its Micro Focus COBOL division, Merant announced the sale of its DataDirect data connectivity division to Golden Gate Capital Ventures for \$29.3 million. Golden Gate also purchased

the Micro Focus division.

"We believe the growth opportunity was stronger in the enterprise change management market," said Larry De'Ath, Merant's vice president of communications. "We want to stay focused on that, and this was a chance to generate some cash along the way."

Merant's software configura-

tion management line, PVCS, is well established. To round out the brand, Merant has released PVCS Content Manager 2.0 (www.merant.com/pvcs/content_manager), the third generation of the WCM tool acquired by Merant in February with the enterprise division of Net Objects, said Andrew Weiss, chief technology officer at Mer-



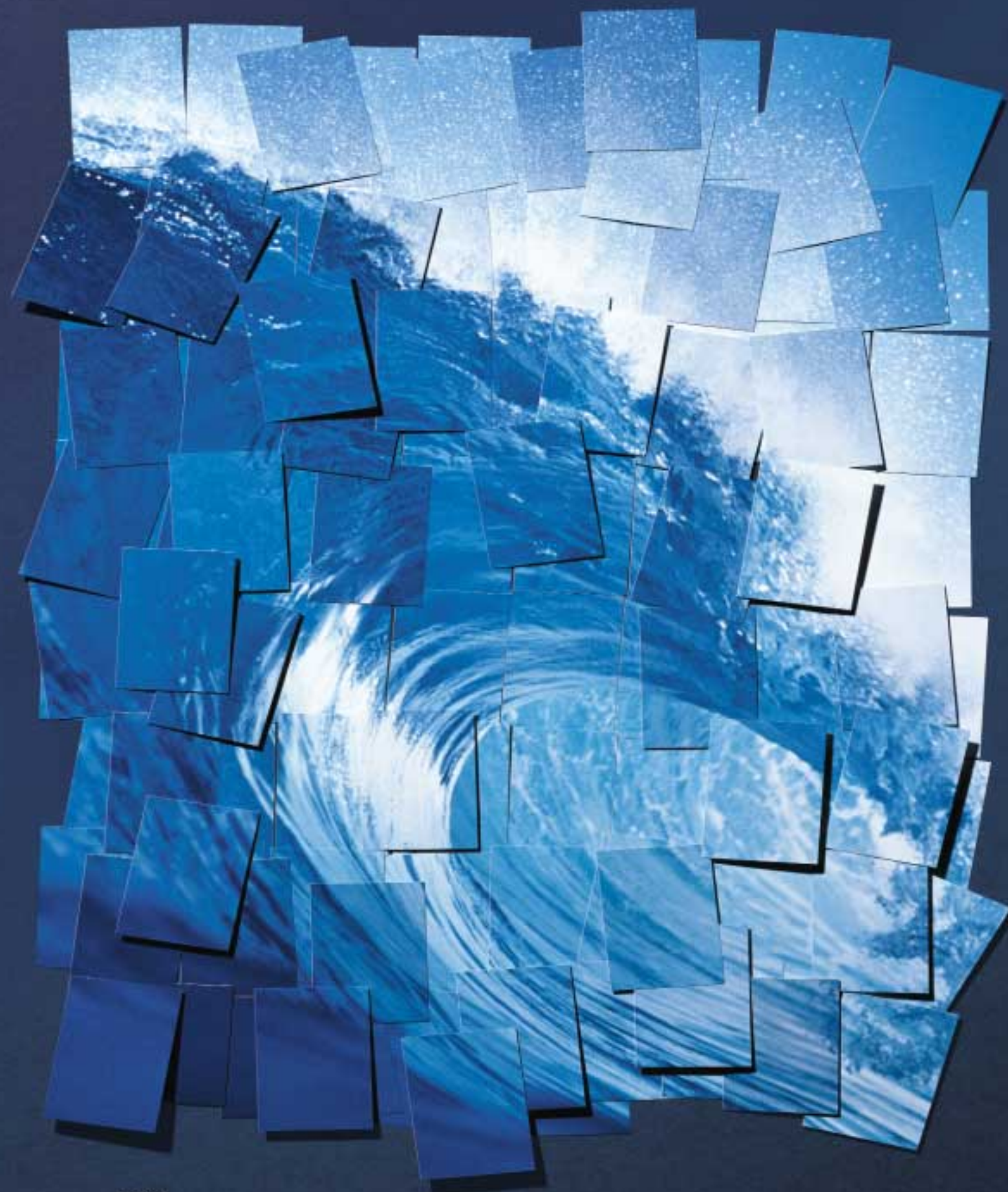
PVCS Content Manager provides a graphical view of a site's assets.

ant. Some of the functionality of Content Manager was rolled into the August release of the PVCS Dimensions 7.0 ECM suite.

"It's about taking advantage of all digital assets," Weiss said. "We've aggressively pursued the notion of convergence [of SCM and WCM] without giving up what's specific to either. There is a core overlap of disciplines, but the fundamental needs and abilities are different."

Merant will seek to differentiate its offering from the numerous competitors in the enterprise management space with an enterprise offering priced below \$1 million, but with more features than those usually found with a lower-priced solution. Weiss said PVCS Content Manager 2.0 Enterprise Edition sells for \$90,000 on per-server pricing, with a separate Team Edition available for \$30,000 for up to 10 users. Team Edition runs on an application server; it comes bundled with Apache's Tomcat but also works with IBM's WebSphere, and support for BEA's

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Visual Basic.NET, C# Going RAD

Strong feedback prompts Microsoft to refine languages

BY LISA MORGAN

Microsoft Corp. is refining its Visual Basic.NET and C# languages to lure more developers to the .NET platform. As a result of strong developer input since the release of Version 1.0, Microsoft said that it will continue to evolve the languages to include more RAD-like features. In addition, Visual Basic.NET will become more powerful and C# will give developers more fine-grained control over applications. Final versions of both languages will ship as part of the Visual Studio.NET suite later this year.

Visual Basic developers have had three major complaints about Visual Basic.NET. First, Visual Basic.NET is generally perceived as harder to use than Visual Basic, which may be creating an obstacle to adoption. Second, Visual Basic.NET differs so greatly from Visual Basic, it might as well be considered a new language. And third, Visual Basic.NET is not completely interoperable with Visual Basic.

Despite a tidal wave of negative feedback about Visual Basic.NET Beta 1, Ari Bixhorn, Visual Basic.NET product manager, said the company is listening to its developer base, and it's paying off in strong support.

"We're getting incredible feedback from [Visual Basic.NET] Beta 2 users," he said. "Some people were skeptical about 1.0, and we listened. Version 2 has significant improvements, like an upgrade tool that upgrades code and the user interface."

Upgrading applications is indeed a major concern of Visual Basic developers, including Gary Baney, CTO at Flashline.com, a software development firm. He said his ActiveX code is now invalid, and although he can manage it, he's concerned about the number of layers he'll have to maintain. He also voiced concerns about Microsoft's long-term support of Visual Basic 6.0.

According to Bixhorn, Microsoft plans to support Visual Basic 6.0 far into the future, but

Visual Basic.NET "is definitely the future for Visual Basic developers." If Microsoft makes any changes to Visual Basic in the future, such changes will be driven by customer feedback, he said. At the moment, Microsoft is focused solely on the production release of Visual Basic.NET.

TOTALLY RAD

Visual Basic.NET is bringing RAD development to Web applications, XML Web services and server-side logic, said Bixhorn. While specific feature improvements are yet to be determined, he said, there will be an increased focus on the rapid development of XML Web services, Web applications, mobile applications, distributed data and XML applications, server-side business components and rich Windows applications.

The next version of Visual Basic.NET will provide more "power" features as well, but Bixhorn said that Microsoft is beginning its planning and wouldn't discuss specifics. Currently, Visual Basic.NET power includes object-oriented constructs that provide inheritance for code reuse and structured exception handling for better error management, direct access to the .NET Framework and free threading for highly scalable operations, he said.

"Over the past 10 years, the needs of developers have changed; there is a greater focus on the Internet, distributed applications and disconnected data scenarios," said Bixhorn. "Before Visual Basic.NET, the ability to create these types of applications was much like Windows development before [Visual Basic] 1.0—it required a lot of low-level coding and was not a highly productive experience. With Visual Basic.NET, all of this changes."

Visual Basic.NET was developed for the .NET platform rather than traditional Windows application development, so Microsoft made some funda-

mental changes to the languages. Developers have condemned some of the changes, such as modifications to the language constructs.

COMPATIBILITY WITH WHAT?

The changes come with good news and bad news. The good news for developers is inherent interoperability among Visual Basic.NET, C# and Visual C++ classes and components. Because Microsoft's Common Language Runtime (CLR) is language-agnostic, said Bixhorn, applications can now be developed using a combination of languages and, allegedly, universally debugged. The bad news is that the price of compatibility with C# and Visual Basic is reduced compatibility with Visual Basic 6.0 and earlier.

"Microsoft changed quite a lot in Visual Basic.NET, such as changes to the data types," said Sergey Yezhov, CTO of Vested Development, a software outsourcing firm. "Some of the changes are not relevant to the migration."

Flashline's Baney said he doesn't see a lot of Visual Basic developers moving over to Visual Basic.NET yet.

"It's like investing," he said. "Investors take advantage of upturns and downturns. Uncertainty makes developers unsettled."

Baney and Yezhov are both monitoring the development of Visual Basic.NET and C#, as well as the .NET platform, but for the time being prefer to bank on Java. Yezhov said all Vested Development's commercial development is done in Java with some in-house development based on Visual Basic. Baney said Flashline "isn't married to Java," noting that while Microsoft is strong with its Component Object Model, Sun has the edge on micro device application development.

Microsoft's Bixhorn said developers are discovering that Visual Basic.NET 2.0 is much easier to use than 1.0, and that the initial concerns about ease of use have been "significantly diminished." Moreover, he said,

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Visual Basic.NET will provide more 'power' features, says Microsoft's Bixhorn.



Flashline's Baney questions Microsoft's long-term support for Visual Basic 6.0.

News Briefs

COMPANY

NeuVis Software Inc., maker of a model-driven rapid application development tool suite, has enabled its NeuArchitect RAD environment to create and deploy J2EE applications for Oracle's 9i AS application server and 9i database ... **DevX.com Inc.** has added 27,000 code samples from Sourcebank, a developer-focused search engine, to DevX's existing free code library. Visitors to the DevX.com Web site now have access to more than 38,000 code samples available for study ... **Microsoft Corp.** has formally named its HailStorm Web services initiative. The new name of HailStorm is .NET My Services.



PRODUCTS

CodeWeavers Inc. has released a new version of its **CrossOver Plugin**, a Windows-to-Linux adapter for use with Windows browser plug-ins and e-mail viewers. It will now enable users to access Windows files and plug-ins while working with Linux ... **MigraTEC Inc.** has extended

64Express, its 32-bit to 64-bit code migration application, to target the PowerPC microprocessor. Once a C or C++ application is migrated, it can run in native PowerPC mode in the 64-bit platform ... **Rogue Wave Software Inc.** is working with Intel Corp. to port its **Source Pro C++** component libraries to Intel's **Itanium processor**, running on either 64-bit Linux or 64-bit Windows. Also, Rogue Wave has added XML and SOAP support into **SourcePro Core** and **SourcePro Net**, two elements of Source Pro C++ Edition 2. SourcePro Core has new components that enable developers to create XML from C++ data. The new functionality in SourcePro Net lets developers use their knowledge of C++ to implement Web services by providing C++ encapsulations of SOAP and other key Web services technologies ... **The JReport 3.2** Java-based report generator from Jinfonet Software Inc. now features faster PDF generation and a new BigDecimal numeric format, and supports network printers. The new version, according to the company, now fully supports JDK 1.1, 1.2 and 1.3, as well as Microsoft's JVM ... **Oak Grove Systems Inc.** now supports IBM's WebSphere and Oracle's 9i AS with its Reactor 5.0 J2EE-based XML process engine. Reactor is designed to help create workflow applications. **Reactor 5.03**, just released, also provides a SOAP interface for sending workflow commands and queries ... Recent enhancements to **Component Generator** from Micro Focus International Ltd. include support for WAP and J2ME protocols, and support for mapping mainframe data to XML DTDs, allowing developers remote access to CICS mainframe applications and to visually map mainframe data and generate XML.

Developers can convert CICS business processes to JavaBeans, EJBs, COM and XML reusable components ... **VenturCom Inc.** is updating its real-time task scheduler for 32-bit Windows to accommodate Microsoft's forthcoming Windows XP. **RTX 5.1**, which entered beta in early September, also for the first time runs on multiprocessor systems. The company expects general availability before the end of October ... **Seapine Software Inc.'s TestTrack Pro 4** now runs on Solaris on either SPARC or Intel processors, adding to its support for Linux and Windows. The company is working on a server component for Mac OS X. TestTrack Pro 4 is integrated with Microsoft's Visual SourceSafe and offers advanced configurability, the company says ... **GraphOn Corp.** has released the Windows version of its Web-enabling software. The new **GO-Global XP** allows system administrators to deploy Win32 applications over the Internet, with the application accessible either by an ActiveX or Java applet in a Web browser. The company already offers a version of GO-Global for deploying Unix applications ... **Vignette Corp.** has updated its J2EE-based content-management suite. **Vignette V6** includes tools for personalization and integration of Web content, and a set of extensions for collaborative development and mobile devices. It also includes new reports. Pricing starts at around \$200,000, according to the company ... **PrismTech Ltd.** has a second beta version of **OpenFusion JDO**, its implementation of Sun's Java Data Object beta specification for providing persistent storage for applications. The



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Load Testing, Scalability Improved in Empirix Test Suite

BY DAVID RUBINSTEIN

Empirix Inc. is making available this month its e-Test Suite version 6.0, with what the company is calling "order-of-magnitude" improvement in load test-

ing and scalability, and with a new licensing model. The company last month also released version 4.0 of its Bean-test component testing tool.

Also new to version 6.0 is

streaming media support for enterprises seeking to use audio and video in their applications, according to Joe Fernandes, e-Test Suite's product marketing manager. Support for Real-

Player is built into the e-Tester functional and regression testing module of the suite, he said. Support for PeopleSoft 8 has been added to allow tests of those applications that are

being moved to Web-based architectures, Fernandes said, while Web site monitoring and reporting have been enhanced.

Empirix (www.empirix.com) has expanded its licensing terms to include a floating network basis that takes into account the numbers of licenses and products desired, according to Toffer Winslow, Empirix's director of enterprise marketing. "We want to attract customers with smaller budgets and allow them to add on options as they need to grow, all within the same product family," Winslow said. e-Test Suite starts at \$23,995; the functional testing, load testing and performance monitoring modules are available separately at \$4,995, \$9,995 and \$13,995, respectively.

Meanwhile, the company's Bean-test 4.0 features a new user interface that allows users to create EJB methods sequences without programming, load testing over prolonged periods of time to detect performance issues that arise over time and advanced data manipulation so developers can create numerous complex scenarios. Bean-test pricing starts at \$6,995. ■

COBALT A.I. OFFERS SDK FOR WINDOWS

BY ALAN ZEICHICK

"Igor, fetch me brain!" If that doesn't work, Cobalt A.I. Software Inc. believes that it can solve your artificial intelligence problems with its new AI SDK for Visual Basic, C++ and other languages that support Microsoft's Component Object Model.

The SDK includes utilities for neural networks, genetic algorithms and fuzzy logic, according to the company (www.cobaltai.com), and can implement each of those techniques with either two or three method invocations.

Neural networks are used for hard-to-characterize pattern recognition and classification problems. Genetic algorithms are search algorithms that are useful for solving computationally difficult problems quickly. Fuzzy logic extends Boolean logic to handle uncertainty and shades of values between true and false.

Cobalt's SDK is priced at \$9.95 per developer without support, or \$239 with one year of support. ■

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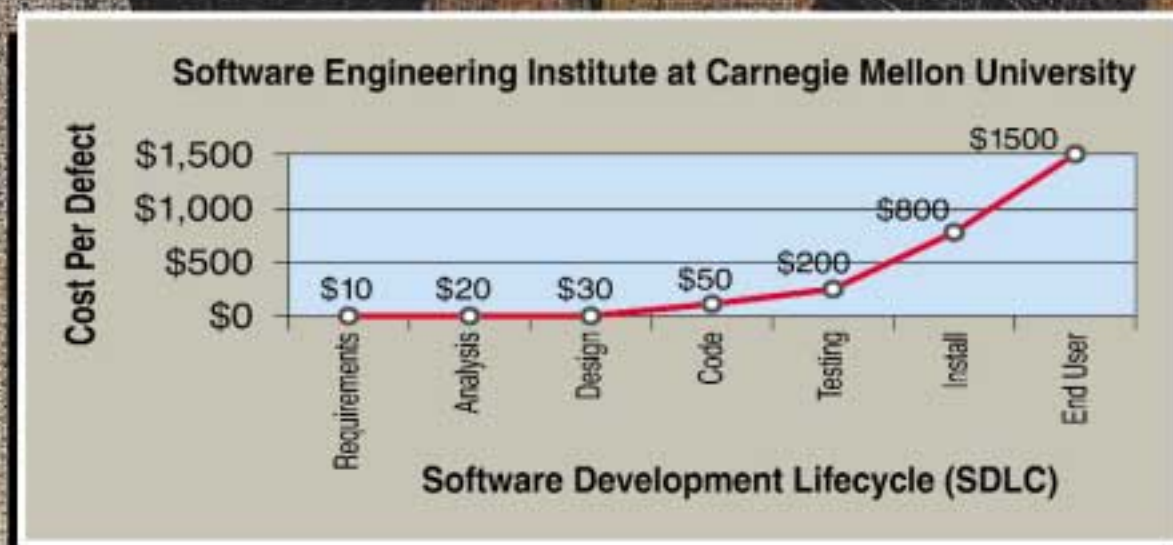
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LogicLibrary Indexes Assets in a Logical Way

BY DAVID RUBINSTEIN

Ellen Milantoni is betting on two things. The first is that Web services will force software development teams to adopt the notion of assembling applications from pre-existing pieces. The second is that the lack of effective asset management tools has held back broader adoption of component-based development.

If she's right, Milantoni, a former vice president at Borland Software Corp. who is a co-founder and the chief executive of Pennsylvania start-up LogicLibrary Inc., has perfectly timed the release of her company's Logidex reuse architecture, which was announced late last month. "We felt a convergence happening between XML and components," she said. "It's moving people toward an assembly paradigm."

The key to the Logidex solution, she explained, is that it ties assets to business processes through the use of reference models. "Users can navigate through the reference model to identify the pieces they need to build applications," she said. And more than merely code components, Logidex can help organizations capture such assets as architectures, XML schemas and workflows, and then catalog them, she said. Milantoni also said Logidex has value for organizations with large, monolithic applications that wish to portion them out as Web services. "EJBs and COM [components] account for only 10 [percent] to 20 percent of assets today," she said. "Anything that's exposed with an API can be captured and exposed as a Web service."

Logidex comes as two distinct products, according to Brent Carlson, vice president of technology and another co-founder as well as a former IBM employee in object-oriented design and component-based development. The first is a tool that captures assets, allowing users to pull together disparate artifacts, whether already in-house or those provided by third parties. The second is a library that can take an asset's functional capability and map it to the functional capability established in the reference models or to specific vertical-market models, he explained. A management tool within the library tracks the use of assets within an organization.

The library, Carlson added,

offers discussion forums and explanations of how to best use the assets. "You go to one place and understand everything about the asset," he said. If, during a search, more than one asset comes back, Logidex will

score and rank the choices to show a relative best fit in terms of technical and business attributes, he added. Further, Milantoni said, third-party private libraries could be accessed.

Milantoni said LogicLibrary

(www.logiclibrary.com) plans first to target the financial services vertical market, helping large companies that combine banking, insurance and equity sales to create Web services out of each of those areas.

Logidex, which is available now at \$95,000 per license with additional maintenance and subscription fees, also is available in an ASP model at a cost of \$20,000 per month for unlimited users. ■



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News Briefs

MORE PRODUCTS

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new beta supports collections and has a better mechanism for loading object-relational maps. More information about the JDO spec is at <http://access1.sun.com/jdo> . . . Stellent Inc., formerly IntraNet Solutions, has released version 2.1 of its **Outside In XML Export**, which converts more than 225 file formats to XML, enabling easy access to information stored in legacy files, proprietary office applications and graphics. Version 2.1 now supports



the latest versions of Corel, Lotus, Microsoft and Sun's office suites . . . Instantiations Inc. has updated its family of **VA Assist Enterprise/J** productivity enhancements for IBM's Visual Age for Java IDE. The version 3 utility set, priced at \$895 per developer, is focused on helping developers migrate from Visual Age to IBM's forthcoming WebSphere Studio. The company claims that VA Assist adds 250 productivity features to the Visual Age for Java browser and composition editor . . . Computer Associates International Inc. supports automatic deployment for Oracle's 9i AS in its **CoolJoe** Enterprise JavaBean development environment, adding to a list that already included iPlanet, WebLogic and WebSphere. The company also says that CoolJoe and **Unicenter**, its infrastructure management solution, have passed Sun's compatibility test suite for J2EE 1.3.

PEOPLE

RTOS and development tools maker OSE Systems has appointed **Virginia Walker** to the position of CFO and vice president of finance and administration for the company's worldwide operations as it prepares for a public offering sometime in the next 12 to 18 months, the company says. Walker has held financial positions with General Electric, Intersil and Sagent Technologies . . . **David C. Nagel** has been named president and CEO of Palm Inc.'s Platform Solutions unit, which is currently being formed as a wholly owned software subsidiary of Palm.



Nagel, who will report to the board of directors, comes to the handheld computer maker from AT&T, where he was president and CTO of AT&T Labs . . . **Robert J. Dietrich** has become CFO at MKS Inc., responsible for all financial, administrative and legal functions. Dietrich joined MKS from Cedara Software Corp., where he served as CFO and vice president of finance and administration for about four years . . . Vignette Corp. also has a new CFO. **Charles Sansbury** was previously a principal at the technology investment banking group at Morgan Stanley . . . Java RTOS developer SavaJe Technologies Inc. has appointed **Jeff McLemen** as executive vice president of professional services, where he will lead OEM customer integration, service and support for SavaJe XE, the company's J2SE-based RTOS and JVM for embedded applications.

STANDARDS

The "DeltaV" versioning extension portion of the **WebDAV** remote authoring specification has passed the IETF's "last call" and will receive an RFC number from that group shortly, according to Rational Software Corp. engineer Geoff Clemm, who has worked extensively writing the specification . . . The W3C has released **Scalable Vector Graphics 1.0** and **SMIL Animation** as official Recommendations, while **Extensible Stylesheet Language (XSL) 1.0** is now a Proposed Recommendation. The W3C also has new Working Drafts covering syntax for **refactoring RFD/XML** documents; **XForms**, a new model for interactive forms considered more flexible than HTML and XHTML forms; **XSL Transformations 1.1**, which explains how to transform a source tree into a result tree; and **DOM Level 3's XPath Specification**, which shows how to access a DOM tree using XPath 1.0 . . . The Java Community Process has ended the community review processes for **JSR-146**, which defines how the Java Management Extensions map to other management protocols, such as WEBM. The JCP has also updated the draft for **JSR-77**, which proposes an application-independent management model for exposing and accessing parameters of J2EE components. ■

TogetherSoft Does .NET

Control Center models, builds Visual Basic, C#

BY ALAN ZEICHICK

Breaking beyond its traditional ties to C++ and Java, TogetherSoft has extended its Control Center integrated development environment to work with Microsoft's Visual Basic language, and has included early support for Visual Basic.NET and C#.

Control Center 5.5, announced in late September, provides what vice president Todd Olson called the first IDE able to work in all of those languages. "A lot of products do well in the Java world. A lot do well in the Microsoft world. There are none that have worked well in both worlds," he said.

According to Olson, Control Center now provides the

same functions for the Microsoft languages as it has for Java and C++. "Our focus has been on offering model-build-deploy from one tool," he said, adding that Control Center 5.5 supports both patterns and metrics for all of its supported languages. Control Center is priced at \$5,995 for a per-developer license, and \$9,595 for a floating license. The company also offers a stand-alone version without its collaborative features, Control Center Solo, for \$3,495. The IDE runs on HP-UX, Linux, Solaris, Tru64 Unix and Windows.

This new version also supports Oracle's 9i database, as well as IBM's DB2 7.1, and can be used to build SOAP/Web services-based applications,

according to Olson.

Beyond the 5.5 release, said Olson, TogetherSoft is working on future improvements to its development interface. "Our legacy is in modeling—that's what we're known for, and that's where we're strong," he said. "For our next release, we're looking at significant improvements to the 'build' and IDE functions."

In addition, Olson said that the company (www.togethersoft.com) is building a real-time extension module for the IDE, with a focus on building real-time wireless applications, and is working on creating a modeling-only version of Control Center targeted at business analysts who aren't actually developing software. ■

SilverStream eXtends J2EE Product Line

BY CHRISTINA M. PURPI

SilverStream Software Inc. is putting the eXtend brand on its application server and J2EE-compatible layered products, and has released beta versions of its improved XML integration server and Java application framework to round out the offering.

"With the emergence of Web services, we realized that with our product line, we can capitalize on the opportunities presented by Web services-oriented applications," said Fred Holahan, SilverStream's (www.silverstream.com) vice president of e-business integration products.

The two products, eXtend Composer and eXtend Director, were previously available under the names xCommerce Integration Server and ePortal, respectively, according to Holahan.

New to the forthcoming eXtend Composer version 3.0, now in beta, is interoperability with Web services, specifically Microsoft's .NET initiative. "Composer supports the XML enablement of enterprise applications and allows you to create information flow across systems," Holahan said. Also new to Composer is a built-in XML editor and a UDDI browser that keeps track of created Web services through a database structure.

Director, Holahan explained, is a Java framework that allows



Composer can create Web services that open hard-to-access legacy apps.

XML information to be presented in a personal, relevant manner on any device. With Director, he said, "everything is internalized; all you have to do is input your unique functionality." New to the next beta version of Director is a visual development environment that Holahan claims allows Web applications to be developed more quickly and includes separate subsystems for content management, workflow and user profiling, as well as support for JSPs and performance enhancements.

Both Composer and Director are J2EE compliant and cross-platform compatible, claimed Holahan. "With the eXtend products, you can deploy into any J2EE application server."

The complete eXtend environment will be available by mid-November and is priced at \$1,995 per developer seat. The Enterprise Edition for deployment starts at \$100,000 per processor.

In related news, SilverStream has released version 1.0 of eXtend Workbench, another component of its integrated services environment, which provides for the development and deployment of J2EE-based Web services-oriented applications.

Workbench enables Java developers to build portable services-oriented applications based on industry standards. Available now, Workbench is free to J2EE and Web services developers for a limited time. ■




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Iona Supports Web Services, Mainframe Linux

BY ALAN ZEICHICK

Lots of new product, platform and personnel changes have taken place recently at business-integration vendor Iona Technologies Inc.

The company has released a technology preview of its XML-Bus Web services toolkit, which joins several other vendor offerings as a means of exposing existing applications as Web services. It is available for free download from www.iona.com. The company describes this runtime component of the XMLBus, announced in February, as a Web services container that marshals SOAP messages, deals with discrepancies and abstracts the complexities of the messages to allow for communication among applications residing on disparate platforms such as .NET, J2EE, COM and CORBA.

Iona also has extended its Linux support to IBM's z900 and S/390 mainframes. A version of

its e-Business Platform will be available in the fourth quarter, according to the company.

The company also has updated its lightweight Orbix/E CORBA-compliant Object Request Broker for embedded

applications. The company claims that Orbix/E 2.0, available for C/C++ and Java, has faster performance and a smaller footprint: as little as 100K for clients and 150K for servers. The previous version of

the product, which is compliant with a subset of CORBA 2.3, was called Orbacus/E.

In mid-September, Iona also beefed up its management team with the addition of Jim Boak as chief technology officer. Boak

was formerly vice president of technical strategy at Compaq Computer Corp. The former CTO, Sean Baker, will continue in his role of chief corporate scientist and retain his seat on the Iona board of directors. ■

Jacada Tackles Host Integration

BY DAVID RUBINSTEIN

Extending its reach beyond common messaging interfaces, Jacada Ltd. late last month released two products that it claims will help organizations leverage their legacy systems.

The products, among the technology assets gained when Jacada purchased Propolis Software Inc. in August, have been rebranded as Java Integrator and Java BPm. According to the company (www.jacada.com), Integrator allows customers to tie packaged applications such as CRM and ERP to large-scale hosts such as S/390 mainframes and AS/400 and VAX midrange servers, where business processes and data are stored. BPm is a graphical business process management tool that allows for the creation and modification of processes that are reflected in the organization's applications.

"The products directly complement our existing offering, the Jacada Interface Server, and allow us to provide our customers with a comprehensive set of application interface and workflow solutions," said David Holmes, Jacada's senior vice president of marketing, in a statement. Pricing was not available at press time. ■

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Sonic Embraces C++, TIBCO

BY ALAN ZEICHICK

It's not just for Java messaging any more; Sonic Software Corp.'s SonicMQ Java message server now sports a new C/C++ client, as well as a bidirectional bridge that allows the JMS serv-

er to transfer messages with TIBCO Software Inc.'s Rendezvous message server.

According to Sonic (www.sonicsoftware.com), the new JMS 1.2-compliant client includes both C and C++ inter-

faces that offer a native implementation of the JMS protocol without the need for a Java Virtual Machine or the use of JNI, the Java Native Interface API set. The C/C++ APIs support both of JMS' point-to-point

queues and publish/subscribe topic messaging models, and can work with JMS TextMessages and ByteMessages. The implementation of JMS used for the client also includes TCP/IP, with the ability to

encrypt message payloads.

The new client, available immediately for Solaris and Windows NT/2000, is compatible with Microsoft's Visual C++ and Sun's Pro C compilers, the company claims. The C/C++ client joins Sonic's existing Java and ActiveX JMS clients for its SonicMQ message server.

Sonic also unveiled a bidirectional bridge to the Rendezvous message server, which implements TIBCO's own messaging protocols. According to Sonic, the TIB/Rendezvous Bridge translates messages between JMS and TIBCO formats. Sonic already offers a similar bridge for IBM's MQ-Series message server. ■

COCOBASE O/R INTEGRATES WITH UML

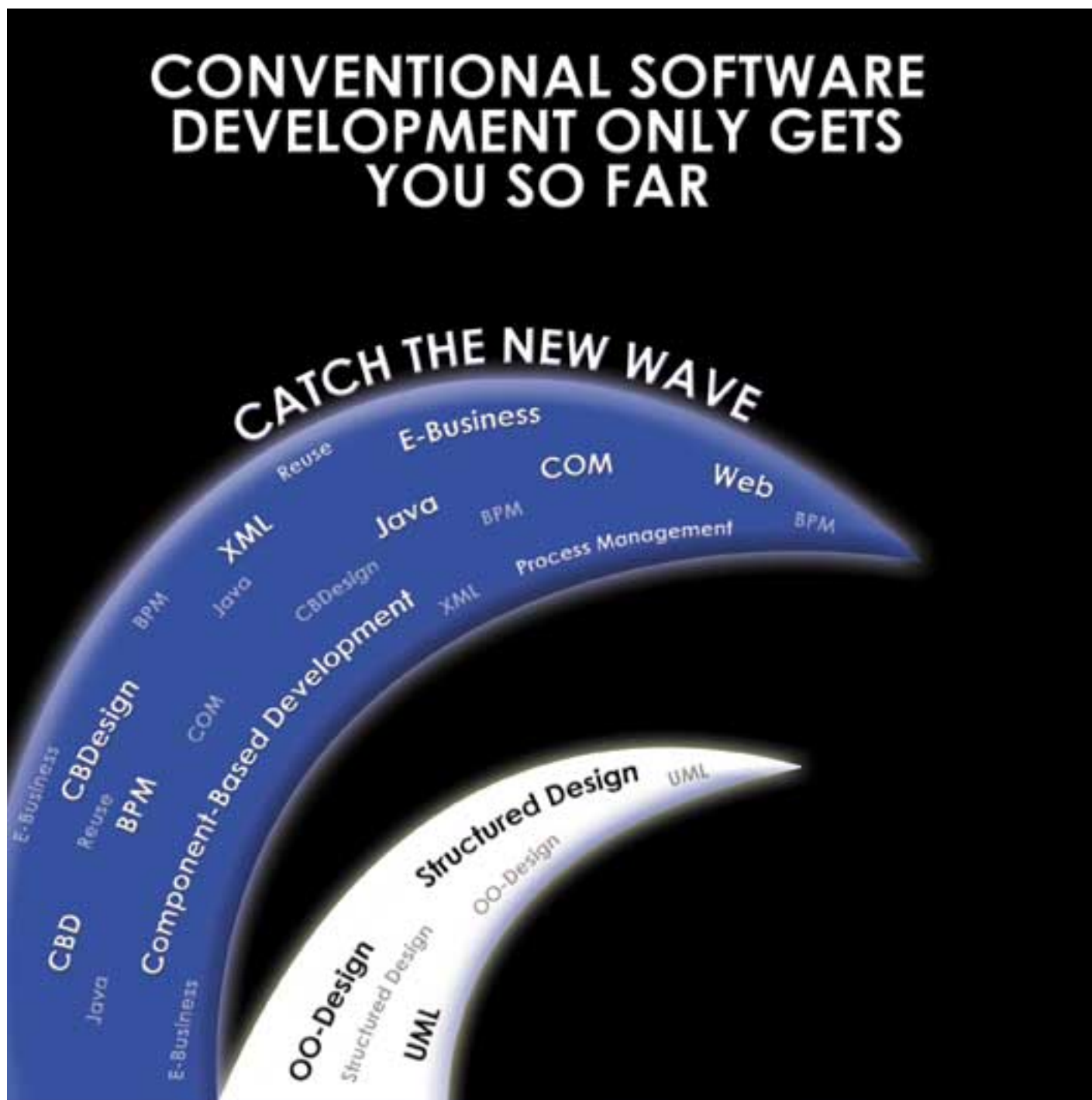
BY ALAN ZEICHICK

Thought Inc. has taken the next step forward with object-to-relational mapping by allowing its CocoBase O/R mapping software to integrate with third-party UML-based modeling tools.

Ward Mullins, Thought's CTO, said the latest revision of CocoBase Enterprise, version 3.1, now can exchange data with Rational Software Corp.'s Rose, TogetherSoft Corp.'s Control Center, and other XMI-compliant UML mapping tools. CocoBase can turn those UML/XMI models into persistence maps, he said, generating abstract Java classes and Enterprise JavaBean components that can simplify the process of mapping relational data with objects.

CocoBase supports a wide variety of EJB classes and object types, according to the company, including container-managed persistence, bean-managed persistence, entity beans, session beans and Java Server Pages. The use of XML, or the XML Metadata Interchange, provides CocoBase with the ability to exchange UML metadata with the third-party modeling tools.

CocoBase 3.1 is available now with a price of \$3,750 per developer seat, runs on Linux, Unix and Windows development stations, and is able to deploy onto a variety of Java application servers and SQL/JDBC databases. The company (www.thoughtinc.com) does not charge runtime fees for applications built using its tool. ■



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VB.NET

← continued from page 3

Visual Basic developers will be able to apply their existing Windows application development skills to .NET Web services, instead of worrying about how Web services might differ from traditional Windows applications.

Michael Swindell, director of product management for Borland's RAD business unit, disagreed. He said developers need to think differently. "You need to look at the Internet as a development platform for distributed applications," said Swindell. "[In the Web services model] services use the Internet

as a platform rather than a browser or portal. You need to understand business processes."

C# STRIKING A CHORD

C++ developers who are under pressure to produce Web applications quickly are the prime targets for Microsoft's C#. Again, there's a good news/bad

news scenario: The good news is C# is similar to C++. The bad news is C# does not offer the fine-grained control some C++ developers demand. As a result, Microsoft will be giving developers more control over the code moving forward, which should at least partially appease the C++ developers.

"C# combines C++ syntax with a higher level of productivity," claimed Prashant Sridharan, C# product manager at Microsoft. He also said that C++ will remain for game developers and those creating graphics-intensive applications.

Sridharan declined talking to SD Times about the specific features of future versions of C#, but said Microsoft's goal is to preserve the RAD-like simplicity of C# while giving developers who are accustomed to controlling memory and application internals a comfortable environment in which to work.

"It could mean a number of things to both the language and tool features, but right now they are all merely theory. [We have] neither code nor specs to back them up," he said. ■

ROGUE WAVE

← continued from page 1

replace Iacobucci is in the best interests of the company. "I don't think this is necessarily an internal attitude, rather that we just have not been able to capitalize on potential partnerships with industry leaders. Currently, we have a solid management team, a proven customer base and money in the bank. If we didn't think so, the board would have asked for additional resignations," said Keffer.

Keffer claimed that Iacobucci "did a good job of getting the company focused on the basics, but we need to enter new markets—markets such as Web services and XML data storage."

Commenting on the financial future of the company, CFO Merle Waterman said, "Our top priority right now is stability." He also claimed that "a significant [number] of deals must close in order to meet lowered fourth-quarter expectations of \$15.1 [million] to \$15.6 million." As of press time, Rogue Wave's stock price was at \$2.03, steadily declining since February when it was at approximately \$6 per share. According to financial reports, Rogue Wave (www.roguewave.com) posted a \$192,000 net loss in its third quarter, reduced from the same period last year, when a \$266,000 net income was achieved.

Waterman said that "the economic slowdown, combined with the terrorist attacks on the World Trade Center, has had significant negative impacts on revenue and earnings in this quarter and the next one." ■

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was changed in accordance with the feedback we received." Key to EJB 2.0 are increased interoperability between EJBs through container-managed persistence, as well as message-driven beans, a critical element in the messag-

ing and transactional phases.

New to J2EE version 1.3 are requirements for a JMS implementation, the two-phase commit portion of the JTS API used by EJBs, a JAXP parser with support for Simple API for XML (SAX) and the Document Object Model (DOM), and improvements to Java Server

Pages and servlets with the addition of the Apache Tomcat 4.0 container, Galantine said.

Galantine also said that for organizations considering utilizing Web services, J2EE 1.3 can be a valuable framework. SunOne, Sun's Web services platform, uses J2EE in important ways, Galantine said, including

the XML integration as well as the message-driven beans. "It's a complete stack from Sun but doesn't lock you in to the one vendor," Galantine said of SunOne. "Everyone using the J2EE architecture will have stronger products for integration."

Recently Sun has emphasized its Forte tools' close ties to the

iPlanet application server, but is said to be seeking certification for Forte tools, which will indicate compatibility with any J2EE-certified application server.

Galantine explained that the Java community, which ultimately approved the new specification, made a real commitment to backward compatibility, saying that functions that worked in J2EE 1.2 can be moved to 1.3 without problem. For earlier versions, before there were compatibility tests, Galantine said it is up to the vendors to check for backward compatibility. "Some people think we're racing too fast" with Java technology, Galantine said, "while others need to keep up with the latest advances. J2EE has something for both camps." ■

MERANT

< continued from page 1

WebLogic and iPlanet's application server is coming "very soon," Weiss added. In addition, Merant has made the tool an "out-of-the-box" solution for fast return on investment, he said.

PVCS Content Manager allows Web content contributors to continue to use the tools of their choice, such as Macromedia Dreamweaver or Microsoft Office, while a browser-based thin-client front end allows disparate contributors access to all features on the content server, Weiss explained. Further, he said, XML-based metadata tags can be used to file and search volumes of assets.

MERANT, MICROSOFT
TEAM ON JDBC DRIVER

Merant has been selected by Microsoft Corp. to create a JDBC driver that will allow Java developers working on non-Windows platforms to access data from SQL Server 2000, according to both companies.

The work will be done in Merant's DataDirect division, which is being sold. However, Jeff Ressler, Microsoft's lead product manager for SQL Server, said the sale would not affect the agreement. The work will continue in the new, as-yet unnamed company; Merant's sale of the division to a venture partnership should be finalized by Nov. 1, according to John Goodson, vice president of product operations for DataDirect.

Microsoft will make the driver available on its Web site (www.microsoft.com/sql) and has no plans to ship the product. ■

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TIBCO Adds XML Transformation to Extensibility Line

BY CHRISTINA M. PURPI

TIBCO Software Inc. has added a new XML transformation utility to its standards-based Extensibility product line.

XML Transform 1.0 is an enterprise XSLT tool that lets users graphically map XML documents through the creation of Extensible Stylesheet Language Transformation (XSLT) style sheets. It also can transform XML documents into other XML formats or into HTML.

Its features include a graphical style sheet editor, an XSLT debugger and a schema-aware utility that attempts to automatically map elements to specific schemas.

According to the company, the graphical editor lets users drag and drop mappings to simplify the coding of XSLT style sheets, which can then be integrated into a runtime environment to transform XML documents and messages.

"For example, you have two different purchase orders...you load them both into XML Transform, and it will automatically find the elements that match," said Ian Hunter, prod-

uct manager for TIBCO (www.tibco.com) "The finished product can then be used with XSLT processing engines."

The tool's debugger lets users trace through the map-

ping process to pinpoint where errors occur and find out which mapping is not working and why.

Companies using XML Transform can create standards-

based XSLT style sheets that can be deployed using XSLT engines. "What sets us apart from other transformation solutions is that XML Transform can be read by any processing

engine, no matter where it was created," claimed Hunter.

XML Transform, which runs on Unix and Windows, is priced at \$500 per user. Enterprise licenses are also available. ■

CODEWARRIOR TARGETS OS X

BY CHRISTINA M. PURPI

Metrowerks Inc. has released CodeWarrior 7.0, the newest version of its C/C++/Java integrated development environment for Mac OS and Windows development workstations. According to the company (www.metrowerks.com), the software will allow developers to target Classic Mac OS, Mac OS X, Windows, Java and Apple's Carbon application environment from a single IDE.

CodeWarrior also includes Metrowerks' object-oriented C++ PowerPlant framework, and a Mach-O converter that transforms Carbon PEF projects to Mach-O, so that older Mac OS projects can be recompiled and run natively on Mac OS X.

The Windows-hosted version of CodeWarrior 7.0 is selling for \$499 per developer seat, while the Mac version is priced at \$599. A combination package is available for \$799. All are available immediately. ■

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Reference Platform Seeks to WIN the Enterprise

Low-power 440MX Appliance Reference Design promises five-year life cycle

BY EDWARD J. CORREIA

Embedded hardware maker WIN Enterprises Inc. has released a low-power single-board computer kit that the company claims gives developers everything needed to begin developing x86-based Internet appliances, factory control and medical devices, communications and other networked devices.

The 440MX Entry-Level Communications Appliance Reference Design and Developer's Platform kit is built around Intel's 440MX chip set, and can work with low-power versions of Intel's Celeron or Pentium III processors. Also on-board are 100MHz system and memory buses, and two USB, serial and 10/100 Ether-

net ports. The board also can accept a pair of hard drives, can address as much as 128MB SDRAM and includes a PCI Mezzanine card (PMC) connector for attaching low-profile option boards. According to the company, the board runs DOS, Linux and all flavors of Windows; it ships with Red Hat Linux 7.1 and development tools, and includes all necessary board support packages.

According to Chiman Patel, WIN's CEO, one of the chief advantages of using a board based on Intel's 440MX chip set is protection from obsolescence. "Our board is designed with longevity in mind. And with



The strengths of the 440MX are small size and low power usage, says WIN's Patel.

Intel's backing, all of the components on this board will be available through Intel's Applied Computing division for at least five years." WIN (www.win-ent.com) manufactures reference boards for Intel.

According to Patel, the 440MX's other strengths include its small size and low power usage. "The whole object of this platform is low power [consumption]," he said, adding that the board uses about 50 percent less power than competitive platforms, requires no fan, and measures about 4 inches by 7 inches.

Although pricing was still being estab-



On-board components are guaranteed to be available for five years.

lished at press time, Patel said that the board itself can be purchased by developers in single quantity for about \$200, or for \$625 in a metal chassis with an external 12V power supply. The enclosure includes

a 16x2-character LCD, five-button keypad, a hard disk drive and 14 LEDs, eight of which are programmable. Both products support headless operation and video redirection, and are available now. ■

TrollTech Shakes Bugs Out With Qt Palmtop 1.4

Windowing system gets GUI overhaul

BY EDWARD J. CORREIA

Norwegian software tools developer TrollTech AS has released Qt Palmtop 1.4, the latest version of its windowing system and application suite for embedded devices running Linux. The new version will include a new user interface, enhancements and performance improvements to its program launcher and applications, and myriad bug fixes, the company says.

Qt Palmtop runs atop Linux and TrollTech's Qt/Embedded, the small-footprint version of the company's cross-platform GUI application development environment that

TrollTech claims permits applications to be written once and ported to any platform supported by the tools.

According to the company, nearly all the Qt Palmtop applications have been enhanced. The file manager now can launch applications based on a file's MIME type, the media player can work with files in Microsoft's AVI format, and the environment now includes a LAN set-up utility.

Among the improvements to the program launcher is the ability to preload applications, increasing launch speed, the company says. Documents now can be categorized and filtered by type, category and name. The launcher also can display recently used application icons in the taskbar and automatically shut down least recently used ones.

Qt Palmtop 1.4, which requires the Qt/Embedded 2.3.1 graphical framework, is available now under GPL license for noncommercial use at ftp.trolltech.com/qt/embedded/palmtop. Commercial licenses also are available; prices vary by quantity. Runtime prices range from \$2 to \$15, and are based on volume. ■



The enhanced application suite reportedly contains fewer bugs.

SAVAJE SET TO RAVAGE JAVA RTOS MARKET

Claims first to offer embedded access to J2SE APIs, faster JVM

BY EDWARD J. CORREIA

Java developer SavaJe Technologies Inc. this month is scheduled to release SavaJe XE, a multithreaded embedded RTOS and virtual machine based on the Java 2 Standard Edition that the company claims can execute applications 60 times faster than competitors' J2ME implementations, while offering the full set of J2SE APIs. The company demonstrated the latest beta of the operating system at the JDJEdge conference in New York late last month.

"Our users are telling us that this is by far the fastest Java plat-

form in the industry," George Grey, SavaJe's CEO, said in a statement referring to users of the public beta. Grey added that giving developers access to the full J2SE APIs, rather than the J2ME interfaces, "enabled rapid application deployment."

First released to a limited number of beta users in April, SavaJe XE has reportedly taken on a host of new features, including support for the JavaSound API, wireless and dial-up networking, and support for an external keyboard. Also to be added to the final release will be a suite of applications, including a

JavaScript-capable Web browser with security features, a contact manager compatible with Microsoft Outlook 2000/XP, and a POP3/IMAP4 e-mail client, the company says.

SavaJe XE's target markets include smart phones, handheld computers, Web tablets and information appliances, according to the company (www.savaje.com). The RTOS currently supports the Compaq iPAQ and Psion netBook handheld computers and other ARM-based devices. An enterprise development license costs \$25,000 plus \$50 per device; OEMs pay \$250,000 plus \$10 per device. Individual licenses cost \$100, and porting licenses are priced at \$60,000. ■



Access to J2SE APIs enables faster app deployment, says SavaJe's Grey.

TI, RidgeRun Enhance DSPLinux

BY EDWARD J. CORREIA

Building on technology unveiled earlier this year with Linux developer RidgeRun Inc., Texas Instruments Inc. has released a version of RidgeRun's DSPLinux and board support package for TI's DSC24 digital signal processor, which the company claims can simplify the development of streaming multimedia devices.

Aimed at portable video and audio devices, digital cameras and Webpads, the new technol-

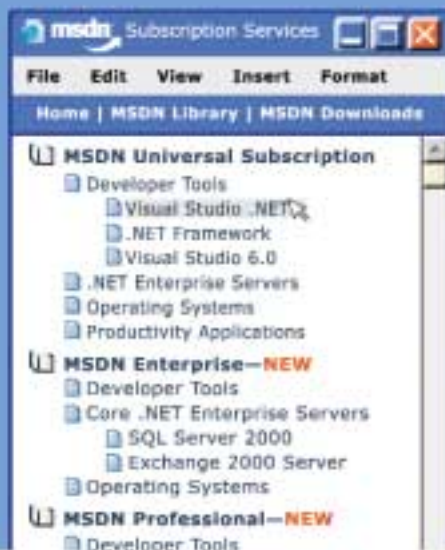
ogy is based on TI's C54x-based DSP, which the company describes as a low-power programmable imaging platform suitable for such applications as security surveillance and medical imaging.

According to Tom Park, RidgeRun's (www.ridgerun.com) senior director of marketing, the technology reduces the complexity of incorporating high-end DSP algorithms into a Linux-based design. "If your company

is more focused on DSP algorithms, this operating system has more capability to integrate your algorithms without your having to become an OS-centric company," he said.

Available now, the TI DSC24 demonstration platform includes an appliance simulator, the DSPLinux SDK and other GNU embedded Linux development tools. TI also has partnered with multimedia developer Ingenient Technologies Inc. to add Ingenient's MPEG-4 video streaming technology to the platform later this year. ■

This is where a company often mocks a competitor's



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Developing Beyond The Desktop

Enterprise embedded systems support mobile, wireless and industrial applications

BY JENNIFER DEJONG



For years, embedded systems programming was about writing the software that makes cell phones, coffee makers, microwave ovens and a host of other smart devices smart.

And unless the company you worked for was in the business of manufacturing and selling such products, embedded systems programming—writing the code that interacts with and controls a specific hardware device—remained largely outside the purview of most software development managers.

But as smart devices proliferate in the enterprise—from PDAs carried by traveling executives, to the handheld computers used by logistics companies to track delivery status, to the black boxes that interact with manufacturing applications on the shop floor—all that is changing. A new breed of embedded applications—the enterprise embedded application—is emerging. It is not only an increasingly important corporate application, but also a development platform in and of itself, according to Nick Jones, a research fellow and vice president in the London office of research firm Gartner Inc. (www.gartner.com).

"There has been a vast physical proliferation of devices, such as personal digital assistants, which will all become part of corporate IT," he said. "And as they gain in power and sophistication, they are emerging as credible platforms for developers to focus on."

Although the widespread use of handheld computers is a relatively recent phenomenon, other kinds of embedded devices, not all of them handheld, have long played a role in manufacturing, retail, medical and supply-chain applications. What's new is the degree to which they and other embedded

devices interact with enterprise applications.

"There is a need for all sorts of smart devices to connect with critical enterprise data," said Neeraj Chandra, senior vice president of marketing and corporate development at I-Logix Inc. (www.ilogix.com). For example, an insurance salesman wants to be able to use his PalmPilot not just to

check his e-mail but to wirelessly access the current rates from the corporate database. And he wants to do that in front of the customer, he said.

I-Logix sells an embedded development environment called Rhapsody, based on the Unified Modeling Language. The company recently announced that version 4.0 is scheduled for release by year's end.

If embedded devices are to become part of the enterprise, interaction with back-end systems is critical, agreed Jones. Or, put another way: "It's not enough for a handheld tracking device to know where a shipment is; it has to be able to communicate that information to a customer database," he said.



The way embedded devices will be used is changing, says Microsoft's Edwards.

"The way devices will be used is changing," echoed Aubrey Edwards, director for the embedded and appliance platforms group at Microsoft Corp. "Traditionally, embedded devices were developed and deployed for stand-alone, isolated use." He cited a manufacturing application as an example. "The black box on the

shop floor used to do little more than control manufacturing equipment in terms of, say, positioning," he said. "Now, we are beginning to see applica-

tions where this kind of embedded device communicates with an enterprise resource planning application to manage inventory, which in turn, communicates with a customer relationship management database, which tracks customer orders," said Edwards.

THE MOVE FROM PROPRIETARY

Edwards said that until a few years ago, proprietary hardware and proprietary operating systems were the norm for embedded devices. "From a development standpoint, that meant you had to do a lot of work from scratch, even writing your own TCP/IP communications stack," he said. He noted that while many embedded development platforms incorporate TCP/IP support today, Microsoft's embedded operating systems (Windows CE and Windows NT/2000) also support current file formats such as XML and SOAP. "When you're developing enterprise applications, it's critical to have a rich programming platform," he said.

The need for interactivity and connectivity has led companies that have long dominated the embedded systems space to turn away from proprietary operating systems and programming

environments. "From a productivity standpoint, it's critical to have a pool of developers that understand the platform," said Alec Saunders, vice president of marketing for QNX Software Systems Ltd. (www.qnx.com). QNX's flagship product, the QNX Platform, a graphical environment designed for embedded developers, supports the POSIX API. Open standards help speed time-to-market, enabling enterprises to develop embedded applications without having to hire specialists to write them, he said, noting the widespread shortage of embedded systems programmers.

To many, the shift that is occurring is more than just a move away from proprietary systems. "What we are seeing in the embedded systems programming space is a move toward the mainstream," said

Mike Ruth, director of strategic product marketing at Wind River Systems Inc. (www.windriver.com). "Embedded applications are becoming more strategic," he said.

Wind River sells a family of embedded software products, including runtime software, operating system, networking protocols and other development tools.

► continued on page 24



The royalty model remains popular, according to QNX's Saunders.

DEVELOPING

◀ continued from page 23

The mainstreaming of embedded systems into the corporate enterprise is also raising questions about the royalty-based business model that has long been the norm in the market. Does that model—where

each supplier to the end product agrees to a percentage of sales—make sense for products that are being developed for corporate use, not for commercial sale?

The short answer is yes. While embedded vendors admit—some of them reluctantly—that the royalty model

is beginning to lose its stronghold, they all confirm it is still in wide use. “It allows customers to manage their risk,” said Wind River’s Ruth. “They can defer some of their cost of the software to the success of the project.” Because embedded devices designed for corporate use are typically pro-

duced in volumes far lower than products developed for commercial sale, different fee schedules apply for smaller-volume products, he noted.

Microsoft’s Edwards said that Microsoft does not view the royalty business model in terms of the size of any one customer’s product run. “We look

at the market overall—and there are lots of companies that need devices [based on our operating system],” he said.

Microsoft’s direct customer for its embedded development platform is not the corporate software developer but its OEM partners, such as Intermec Technologies Corp. (www.intermec.com), which develops custom applications for the end user based on Intermec’s hardware and the Windows development platform.

NEW BUSINESS MODEL

Unlike many of the other embedded systems vendors, I-Logix believes a major transformation of the business model is under way. “The royalty model is not as powerful as it used to be,” said Chandra. The emerging alternative to the royalty business model is leasing software, he said.

Chandra noted that the established business model for embedded systems is experiencing winds of change not necessarily because such systems are gaining prominence in the enterprise, but because of the emergence of open-source alternatives, such as real-time Linux, which anyone can acquire free of charge.

“There is a lot of experimentation going on,” said QNX’s Saunders, noting that the company has experimented with other models. “People are looking at different ways of paying. But the royalty model remains attractive both for us and for the customer. The open-source software model may well go the way of the dot-coms,” he said.

Chandra predicted that the royalty model will also come under fire because of the current economic climate. “The need for cost cutting—the need to restrain capital expenditures overall—makes the leasing model attractive. While royalty payments are capital expenditures, leasing software is considered an operational expense,” he said.

But in the long run, it is less about the economic climate and more about the mainstreaming of embedded systems programming. “You can see the migration of the embedded systems model toward the generalized software model,” said Chandra. As embedded applications take on a serious role in the enterprise, the line is blurring—where does embedded end and enterprise begin, he asked. ■



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Embedded Systems Speed Dell's Assembly Line

BY JENNIFER DEJONG

At Dell Computer Corp.'s factory in Limerick, Ireland, a bank of small black boxes with only limited intelligence is helping to optimize the company's vaunted production line.

The boxes—industrial automation devices—accept data input from each computer being built on the factory floor, said Mike McTague, automation and controls manager at the factory. They read the unique identity tag on each computer, recording exactly where each one is on the assembly line. "There are bar codes analogous to each of step of the process. Each time a computer passes a tracking point, the device logs that data," he explained.

What's notable about these devices is not their ability to record the data, but the fact that they are intelligent enough to disseminate that information throughout the enterprise. The boxes run Microsoft's Windows NT Embedded 4.0, and because they run Windows, each has an IP address and is seen as a computer on the network. "We needed a device we could talk to in our own language—the controller level language," said McTague.

The network makes it simple to route the information collected on the factory floor to any data repository—for example, a SQL Server database app—and in turn, to virtually any desktop within the enterprise.

That makes it easy for Dell to use that data to keep customers apprised of their order status, said John Coulston, a spokesman for Dell in Bracknell, U.K. Dell builds each computer to the buyer's specifications. From the time the order is placed, each computer that will make its way through the manufacturing plant and out the door is tracked with a unique identity number that corresponds to the customer. Because that data is readily available not only to customer service representatives who field calls, but also on the Web site, customers can find out exactly where in the process their computer is, he explained.

The availability of that data—the physical location and the identity of each computer—also plays a key role in enabling Dell to carry out what it calls its built-to-order business model. That information

is routed from the factory floor to a Visual Basic application that details the configuration of each order—whether the customer wants a DVD drive, a flat-panel monitor or other enhancements. The applica-

tion then communicates back to the factory floor, routing each PC to the proper location on line at the proper time, enabling the installation of each enhancement the customer ordered. "It allows us to

automate intelligent manufacturing," said Coulston.

Those are two examples of how data collected by embedded devices on the manufacturing floor might be used throughout the enterprise, said

Aubrey Edwards, director for the embedded and appliance platforms group at Microsoft Corp. "Embedded devices are only just beginning to become part of the larger computing infrastructure," he said. ■

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EDITORIALS

Up Next: Clash of the Titans

It's almost time for two conflicting superpowers to put up or shut up. At the end of September, Sun Microsystems Inc. formally released Java 2 Enterprise Edition, version 1.3. Windows XP, Microsoft Corp.'s new desktop operating system, will be hitting the street soon. Though it's anyone's guess when the full .NET Framework will ship as part of the forthcoming "Whistler" server operating system, there's a lot of beta code available. Preliminary versions of some of Microsoft's HailStorm Web services—recently formally given the dreadful moniker .NET My Services—are currently ready for developers to use.

What that means is developers can finally perform genuine evaluations of these platforms, and determine whether the code justifies the claims proffered by Microsoft and Sun.

Will there be a single right answer, a single best platform for enterprise development? No. Any researching firm, technology publication or industry pundit that claims ".NET Wins!" or "J2EE Wins!" will be vastly oversimplifying the new landscape, and will be doing its customers a disservice.

But that doesn't mean that Java or .NET might not be better for certain enterprises, applications and environments.

Both companies are forcing customers to make a hard choice. Microsoft says, "Use any programming language you want, as long as you license our Common Language Runtime and license our Windows operating system." Sun says, "Use any operating system you want, as long as you use the Java programming language and license our Java 2 Enterprise Edition APIs."

Both approaches have merit and value for customers. Both approaches also place limitations on customers. Neither is perfect; neither is truly a winner.

Passport: Revoked

Microsoft's insistence on integrating its Passport authentication into Windows XP and Web services goes far beyond offering an operating system and distributed application development framework. It forces customers to use Microsoft's services on a constant basis as a prerequisite for using Microsoft's operating system. Today, the company is offering those services for free. Who knows what technological or financial conditions Microsoft may place on Passport service users tomorrow?

For example, when Microsoft unveils the successor to Windows XP, the company might "force" Windows XP users to migrate by no longer allowing the older operating system to authenticate via Passport. As Microsoft's own documentation says, "The .NET services in Windows XP depend on the Microsoft Passport service for authentication." In other words, Microsoft can turn off your users' access to Windows XP, or to any services authenticated via Passport.

By comparison, Sun wins points for not forcing itself into its customers' daily business affairs. An enterprise can standardize on J2EE and never, ever deal with Sun directly or depend on Sun's Web sites, Web services or other products. Java (and J2EE) represents a software development and deployment technology. By comparison, .NET represents a long-term commitment to not only Microsoft's technology, but also Microsoft's present and future business models. ■

GUEST VIEW

ORGANIZED CRIME MEETS SOFTWARE PIRACY

Freedom under the rule of law is one of man's inalienable rights. Central to this basic tenet of liberty is the right to protect and preserve one's property from theft, something that the early settlers in America's West learned the hard way. In the era of the Internet, where new forms of stealing and piracy are being created every day, this fundamental principle of law seems to be eroding. The ability—indeed desire—of groups of people to steal proprietary rights from others via the Web is proliferating alarmingly. And not just by solo operators. Organized crime now is moving in.

Look at the music industry. It is suffering particularly badly at the hands of unscrupulous consumers who are loathe to pay for something that they can easily get for free off the Internet. The multitude of Web sites that have been created and offer free music to hundreds of thousands—no, millions—of users at the expense of artists and their record companies, are the tip of the iceberg. The owners of the music rights, which are being abused through these sites, have had the courts as their only defense. And we all know how costly and time-consuming the legal system can be, even when—probably *especially*—when you know you are in the right.

Look at the problem another way. There are many reports on the cost of software piracy to the software industry worldwide, most of which seem to concur that around a quarter of all software used by businesses and in the home is illegal. And as for the real cost to industry of such theft—this must amount to close to \$15 billion worldwide every year. Such a huge figure is made up of job, tax and revenue losses, and impacts individuals and small companies especially badly. It is not just the big corporations and multinationals—the so-called "legitimate" targets in the lexicon of the anarchist-hacker community—that are getting hammered.

The software industry has long been aware of the dangers and costs of software theft, and attempts to crack this crime regularly make the headlines. The

arrest of the alleged Pirates with Attitude ringleader Robin Rothberg, alias Marlenus, by the FBI is one example of government beginning to fight back on behalf of a beleaguered industry. But governments have to be vigilant and will need to pour more resources into protecting



GARY
MILLNER

all of us against this proliferating crime. Like the fight against drugs, where there is serious money to be made, there will always be people out there looking to reap the rewards of illegal activity.

The first aspect we all need to recognize is theft will never be completely eliminated, whether it be in the physical or digital world. The important objective we need to achieve is to make buying digital products as easy, or even easier, than they have been to steal, while at the same time making stealing digital products so difficult it is not worth the aggravation.

There are two elements that need to be incorporated in the strategy to combat software theft: a more empowered and knowledgeable judicial legal system around the globe; and better and more widely used software protection technology.

The first needs to establish a series of precedents in the capture, fining and jailing of culprits. It also needs to be sufficiently funded and resourced to effectively police this growing worldwide problem. Governments also need to share knowledge and best practice in the fight against the crime.

In parallel with this, the reporting of theft to the appropriate authorities is vital if the true scale of the problem is to be realized, and thus appropriate resources made available. A recent survey from IDC showed that there is, in fact, an increasing trend for people to report theft, with 36 percent of respondents saying they had reported cybercrime to law enforcement officers, up from 25 percent in 2000 and 16 percent in 1999.

The second element crucial to combating software theft is technology. Hackers are always one step behind developers, and there is a constant struggle to ensure that this delicate balance remains in the favor of the developer and not the pirate.

The ideal is for both the legal

and the technical communities to work together, developing technologies that enable hackers to be caught in the act, or at the very minimum, traced back to the machine on which the act of piracy was committed.

Slowly but surely, the U.S. and most of Europe now have more robust law-based defense mechanisms in place to combat software theft.

However, the main problems continue to lie in Southeast and Central Asia, as well as much of the developing world. In these regions software theft is prevalent on a massive scale—think of the hugely discounted "genuine" CDs and computer games being sold in street markets in Bangkok. Evidence of such piracy is also demonstrated by the huge increase in sales of blank CD-ROMs that has been seen over the past few years.

A positive way to look at software theft—indeed the way that I prefer to look at it—is the opportunity that it brings to the developers of tools that combat piracy. This is a billion-dollar industry in its own right, as software developers keep one step ahead of the pirates. And it is one that is set to grow.

What we can all be sure about is that the Internet—with all the benefits and headaches it brings—is not going to go away. Nor are the pirates. New ways will be developed to guarantee safe marketing and distribution of software products, and consumers will enjoy spin-off benefits, including cheaper software, achieved through reduced cost of sale.

So, the twin approach of ensuring more government resources and a better regulatory infrastructure for policing the Internet against pirates, together with more private-sector technical innovation in the field of software protection is the solution to software theft, or at the very least, will ensure we keep one step ahead of the pirates. Our pioneering ancestors would recognize the problem and applaud the solution. As with every new frontier, in the beginning it is wild and reckless, but eventually the police do arrive. ■

Gary Millner is CEO of WrapTech Ltd., which sells electronic software distribution tools for software and music.

COME INTO MY PORTAL, SAID THE SPIDER...

One way or the other, it's bound to happen. You'll be sitting in your office, minding your own business, trying to cope with the flood of magazines and inane requests for changes to the corporate Web site, when an executive you've never heard of walks in and makes himself at home. You'll find out that the new person wants to talk about knowledge management and, more specifically, portals.

Everyone is used to the idea that portals such as Yahoo provide links to all sorts of things. A portal designed for knowledge management uses some of the same concepts, but it's really not the same thing.

A knowledge management portal is a one-stop place on a Web server on your company intranet that provides access to all sorts of information. So in that way, it's like Yahoo. But the means it uses to provide information is quite a bit different.

In one sense, it's easy to talk about what you need to do to develop a knowledge management portal for your company. It must have powerful search capabilities; it must be personalized; it must provide access to all the information that exists in your company about any topic each employee needs to know,

but also restrict access to things they don't need to know. On top of that, it must provide a base for collaboration and communications. That's a little like saying that the Hoover Dam should hold back water. Both statements are true, but they don't really grasp the scope of the project.

So how exactly do you design your company's knowledge management portal? The easy way is to hire a company to implement a portal to help you manage your company's knowledge. But even the easy way isn't always

all that easy, because whether you design the portal site or they do, you're still going to be intimately involved. And having an outside company do the job will cost a lot of money.

The reason you'll find yourself involved in the portal creation process is that you and your company know yourselves best. You know how your IT systems work, how people work together, how information flows and how your culture works. They don't. All of this knowledge is vital to creating a portal that the people in your company will use.

Equally important, you'll also

be involved with creating the requirements for creation of the portal, even if someone else does the grunt work of creating the code. Either way, there are some characteristics that a successful knowledge management portal must have if it's to be useful.

The first and probably most important factor is an understanding of what your company has in mind for its knowledge management initiative, and what

role you, your department and the proposed portal are intended to fill. Depending on your company and its culture, the process of knowledge sharing that is implicit in a knowledge management effort can vary greatly. To be useful, your portal effort must reflect how things work in your company.

Second, your users must be able to find the information they need, along with details about who developed the information, where to find related information and the like. To do this properly requires powerful and sophisticated search capabilities. Users need to be able to detail the information they want and exclude extraneous material. The ability to contact someone once you've located the information is a vital step in knowledge management, so your users can



WEB WATCH

WAYNE RASH

LETTERS TO THE EDITOR

C++ GETS A BUM RAP

I completely disagree with what Mr. Vaughan-Nichols has to say in his Java Watch column ["We're No. 1! Now What?" Sept. 15, page 33, or online at www.sdtimes.com/cols/javawatch_038.htm]. Not many know that C++ offers more flexible and sophisticated methods to object-orient any application. Many of these are absent in Java: Templates are a big feature absent in Java, and operator overloading is another one. Many others exist which I don't remember and which I am not aware of (I don't know much about Java).

Java is better than C++ in only one aspect: It has a huge standard library which gives you great portability. Beyond that I don't see anything. C++ doesn't have a standard library, as the standardization process takes time. (ISO guys, are you listening?) But whatever is present is really great.

Many of Java's new innova-

tions aren't innovations at all.

1. Java is purely object-oriented. C++ is a multiparadigm language. It's like Java is a fruit vendor selling mango, which is a great fruit, and C++ sells mangoes, bananas and apples.

2. Java is simple to learn. Learning the whole of C++ is definitely difficult. But many of these features are hardly required to write average-complexity programs. You don't have to use all of C++ to write good programs. All of those features in C++ have been of some use in large-complexity applications.

3. Java has garbage collection. So has C++ in the form of a library (free and commercial ones are present). Probably Java has this feature built into the language so it can't be managed as properly as in C++.

4. Performance. Well, everyone knows about that.

5. C++ is a general-purpose language; I think it is an all-purpose language. It even beats FORTRAN in its home ground

of scientific computation.

Moreover, C++ is an open standard and Java isn't. You can get C++ compilers for free. The JDK is free but the JVM isn't.

It's unfortunate that articles like his bring a bad name to C++ and simply pump up the hype surrounding other inferior things. I hope programmers investigate before making a choice.

Neeraj Korde
Mechanical Engineer
India

Steven Vaughan-Nichols responds: Let's just say that your facts about Java and C++ aren't the ones I, or the Java and C++ programmers I know, understand about the two languages.

HAIL, JAVA

It is so refreshing to see a mature approach to the world of software and Internet communication ["No Java, No Big Deal," Aug. 15, page 3, online at www.sdtimes.com/news/036/story4.htm]. I would like to see Microsoft run servers and

not only see what's been written, but also find greater depth beyond what may be available on your portal's Web site.

Of course, you can't let your users have any information the company has about any topic. You'll need to be able to identify the specific information each user is allowed to see, and the information they're prohibited from seeing, and tie those limits into their user accounts. While you're at it, you should also be proactive and provide up-front those pieces of information they're most likely to need.

And if that weren't a tall enough order, you'll also need to design the Web site so that it's attractive and intuitive to use, and provides tools for collaboration and workflow. A portal isn't much use if you can't get your employees to actually use it, and it's not much better if it's so hard to use that no one can find his or her way around it.

In other words, creating a knowledge management portal is a tall order. It's not something that you can do overnight or even in a few weeks. It requires intimate knowledge of your company and of the way your company works.

But at least it's not the same as building Hoover Dam. ■

Wayne Rash is a technology journalist and consultant.

applications with the success and security that Java has to offer and still make it compatible without having to spend a fortune every year on buying the latest and greatest upgrade! I know technology is moving fast, but does this mean that we the developers and Joe Soaps on the street must pay for that fact, especially when the first four versions have bugs in them?

Great, Bill, thanks. Please step aside and bring on the Java!

Emil Swanepoel
Radical Training CC
South Africa

CORRECTION

The price of the Infragistics UltraWeb Suite is \$595. UltraWin Suite sells for \$995. The prices were incorrect in a Sept. 15 article.

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HP, COMPAQ AND THE 21ST CENTURY PC

In the last issue, I opined that the depression in the PC industry was a phenomenon entirely separate from the larger post-dot-com economic contraction. I contended that most users today have little need and little desire to upgrade their systems; hence, PC demand is not likely to rise much when the economy begins to mend. It now appears that this view was optimistic. The PC market may be weaker than expected, especially in light of recent developments.

The first of these, of course, is the proposed merger between Hewlett-Packard and Compaq. Both parties admit this is a shotgun marriage, driven by slow sales and recent unwise decisions. Compaq's server orientation is diffused across five operating systems (TruUnix, OpenVMS, NonStopKernel [from Tandem], Linux and Windows 2000); its workstation lines span three families of processors (x86, Itanium and, for the next 18 months, the Alpha). With so many product lines, PCs had become a stepchild; and Dell—with its single-minded all-Intel strategy—was ravaging Compaq sales, despite offering no appreciable price or technology advantage. Dell is just a lot more focused and better managed.

HP could be described in very similar terms to Compaq. It supports HP-UX, Windows 2000, Linux and MPE/ix on its servers. Its workstations support the Itanium, x86 and, for a while yet, the PA-RISC family. Its corporate strategy is focused on services (recall the aborted attempt to acquire Price-WaterhouseCooper's consulting arm), and as a result PC sales were not a major priority, nor are they managed in a way likely to give HP an edge against Dell. HP's one clear success is printers.

Given that both companies have similar weaknesses, it is difficult to find a compelling reason for a merger, other than the potential savings arising from reduction of duplicate personnel positions and the economy of scale in manufacturing. Against these potential (and distant) savings must be weighed the certain (and proximate) costs of the merger and the defections of existing customers.

Supposing the merger goes through, the new company will need to consolidate product lines on a vast scale. A fair prediction is that it should center its offerings around Intel x86 and Itanium for processors and Linux and

Windows 2000/.NET for operating systems. Intel and Linux are the clear winners. This lean and sensible strategy, however, runs into several immediate obstacles: IBM is already doing this and doing it better. IBM has strong product lines at the mainframe, server, workstation and PC levels. All but the workstations run Linux. And all Intel platforms run Windows. IBM's services division is well established and going great guns. IBM lacks HP's printer division or Compaq's PDA division, but its software sales easily offset these success points.

Another immediate problem for the merged company is customer retention. Alpha customers will be wooed by Sun and IBM. Likewise the OpenVMS and MPE/ix customers. Compaq's Tandem customers have no desire to migrate to anything but the most trusted, most reliable systems available. Inevitably, this will mean a call to IBM.

The upshot is that this merger benefits IBM and Dell because it sinks a pair of competitors.

Choice in the PC market will shrink. It will shrink even if the merger fails, because both companies will be weakened by this rejection and neither has a compelling forward-going strategy.

Other factors will also limit choice among PC vendors: Gateway computers sales are in a free fall. And given the economy today, no white knight is likely to emerge to stave off bankruptcy protection.

Other forms of salvation for PC sales appear unpromising. Microsoft's XP operating system is drawing ho-hum interest from consumers and even less interest from corporations. It is not likely to kick-start PC sales. The Itanium and the shipment in early September of a 64-bit version of Windows 2000 barely caused blips. The advent of speedy Rambus that actually works has drawn yawns. A recent opportunity for injecting life into the market was the advent of the Pentium 4 chip, which technically occurred a while ago. Alas, the chip's principal benefit is a set of instructions that optimize multimedia and certain kinds of graphics calculations. On the surface, so small a change will not induce many upgrades. Let's be clear: Hardware and operating system upgrades will not kick-start sales. Not this time.

So, as the PC heads into its 21st year, expect little good news. The PC market will be characterized by fewer vendors, lower profits and less innovation. ■

Andrew Binstock is the principal analyst at Pacific Data Works LLC.

MIDDLEWARE WATCH



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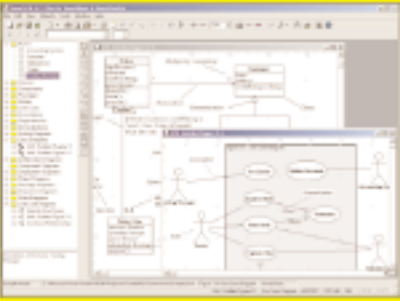
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ANSWERING 9/11 WITH JAVA

On Sept. 11, the first thing I did after staring at a jetliner taking out the second tower of the World Trade Center on CNN was pray. The second was to try to reach my friends and family who live in lower Manhattan. Me and about a million other people.

The phone system could no more handle the load than I could run to New York City from my home in the Blue Ridge mountains. So what did I do? I turned to the Internet, of course. And that's when I heard on CNN that the Pentagon, near Washington, D.C., had just been hit—the area in which I had lived for the last 15 years.

You want to hear a voice first; I tried to call into D.C., though I knew it was futile. Hope over knowledge and knowledge won—the lines were already jammed up. This time, I kicked on my DirecPC satellite uplink to the Internet and I was on the Internet in a minute.

Five minutes later, I was sending e-mails off my address list as fast as I could type, and the AP news service wire was scrolling in one window while The Washington Post was getting updates every 15 minutes in another.

Information was coming in fast but not fast enough, and then it hit me: instant messaging. A minute later I had my Linux Java-based AOL Instant Mes-

senger (AIM) client up. Inside of five minutes I knew that most of my friends and family were OK. By day's end, I knew all of them, including the one who lived six blocks from the World Trade Center, were safe and sound. If it weren't for the Internet, I still wouldn't have known more than 24 hours later.

The Internet had done what it had originally been designed to do: survive a disaster of epic proportions. Then, ARPAnet had been meant to shrug off a Soviet nuclear attack; on Sept. 11, it survived not only having one of its many strongholds, the switches and routers beneath the World Trade Center, destroyed, but also what may have been the most activity on the Net ever.

In particular, I've found that the news Web sites did a remarkably good job of holding up under the load. That personal perspective is upheld by Matrix.Net, one of the leading and certainly the most experienced Internet performance measurement companies around. John Quarterman, Matrix's CTO, reports that Internet sites, which are normally at 96 percent reachability, dropped to 86 percent reachability that morning. Since then it has almost recovered and is hovering around 94 percent.

Latency times, the time it takes to get a response from a site to your PC, also reached a low of three seconds in some areas. Slow, yes, but far better than, say, a Manhattan business phone that probably had a reachability of 2 percent that terrible morning.

Mail servers, on the other hand, took a hit. While the bulk of e-mail is getting through, several ISPs, such as AOL and Canadian e-mail provider ApexMail, appear to have been overwhelmed by the mail load and had significant mail delays.

Instant messaging, however, had its finest hour ever. Using AIM, which AOL reports had its most use ever with 1.2 billion messages sent, I was able to *instantly* communicate from the Appalachian woods with people in midtown Manhattan and next door to the Pentagon. I wasn't alone; hundreds of thousands of others were doing the same.

There are several lessons to be drawn from this day. The first is that the Internet really is robust. Despite the Code Reds, despite a massive usage surge, the Net is as sturdy as its planners ever could have dreamed. If anyone still has any doubts that developing for TCP/IP and the Internet is the only way to go, those doubts should be erased now.

The next is that the reason why so

many Web servers stayed up and running was that the redundancy in both Net connections and in servers finally paid off. When the demand grew, the most important sites were able to bring more servers and bandwidth into play to meet the demand. In no small part this was because of flexible Java underpinnings.

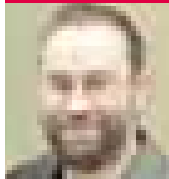
It still wasn't enough, of course. Some sites slowed to a crawl, but to the best of my knowledge, no news site buckled under the demand.

We need to do the same for our e-mail servers as well. Under a massive load, e-mail simply didn't work as well as the Web and instant messaging servers.

And what does all this have to do with Java development? It's a call to arms. Our predecessors built a system that could take a hammer blow and keep running. As we enter a time of war—and make no mistake about it, we are—we need to build programs that are cracker-proof. We need to create software that can handle loads beyond anything we used to think were reasonable loads. Now, more than ever, it's time to build the best possible software we can because there's no telling when a sometimes trivial program—instant messaging—could become vital. ■

Steven J. Vaughan-Nichols has been writing about technology for more than 15 years and also has worked as a programmer for NASA and the Dept. of Defense.

JAVA WATCH



STEVEN J. VAUGHAN-NICHOLS

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SEEK WINDOWS SECURITY OUTSIDE REDMOND

For a couple of years now, the once-vaunted Network+Interop trade show has disappointed me. This year was no exception, though the circumstances at this networking and telecommunications event, held the second week in September, were far too unique to pin this on flagging show momentum. In that vein, I won't be commenting about the events of Sept. 11 in this space. While I feel strongly on the issues brought forth on that terrible day, a software development column isn't the place to discuss them.

A Windows Watch column is, however, the perfect place to discuss Microsoft, and it turns out that many attendees were discussing Microsoft at the N+I show as well, and as is typical, most comments weren't so great. In particular, I was raked over the coals by a few security vendors for previous comments made in this column about Microsoft's newfound ability and respect for security in Windows 2000/XP.

"Microsoft has never and still doesn't care about system or network security at all," said one irate vendor. While I take some issue with that comment, I'll agree that Redmond's track record in this department could be far better than it is. I was also called to task on my last column, which dealt with Microsoft's intended strategy for HailStorm, Passport and Wallet in Windows XP. These

readers agreed with my assessment of Microsoft's large risk in utilizing these technologies as they've described that they will. But the same readers disagreed with my comment that Microsoft couldn't be suicidal enough to leave security holes in products with this kind of liability. Wrong, say these readers, that's just what they'll do. As proof, they proffered a list of known Passport security holes, including one that pretty much hands over user names and passwords.

My response is that, indeed, what little faith I had is shaken, but the versions of Passport to be employed by Windows XP are somewhat different than those in use today. No, I don't know how different, so the point may be moot, but I'll reserve judgment until I see the real thing.

Regardless, the problem for developers remains the same: Am I constrained to using Microsoft security and authentication technology to build Windows-compliant e-commerce applications? The answer is "definitely not"; in fact, I think given the state of Microsoft security, developers are duty-bound to seek effective solutions elsewhere. Some vendors I met at N+I are ample evidence of that.

CryptoCard, for example, is a competitor in the token-authentication space covering either hardware-based tokens

or software-only. Using CryptoCard products such as WebGuard, developers can protect Web pages via one-time passwords generated by back-end CryptoAdmin software. Even better, this authentication can be managed via either software or hardware tokens regardless of location, and can be used to enable either ASP or JSP-based security. What's nice about this scheme is that you're able to beef up an IIS-based Web site's security by an order of magnitude without requiring much in the way of new client-side processes, which makes this solution not only convenient but fairly scalable as well. CryptoCard's software also works with Apache Tomcat and iPlanet Web servers.

For developers looking to deploy internal applications to distributed users, VPNs are usually the requirement. Trouble is that virtual private networks and Windows have a troubled past from the IT side, so programmers usually get some push back from the server folks on this. Next time, tell them to check out Imperito Networks' InstantVPN. This product boils down to a software-only managed VPN service dedicated to Windows NT/2000 networks. Setup takes a fraction of the time that is normally required and even comes with configurable management and gateway components.

And let's not forget Microsoft itself, which hasn't been entirely idle when it comes to improving security in IIS 5.0.

While I'm not completely finished tracking down all the changes they've made to their Web server, most look like fixes to security holes that were left open in IIS 4.0, like removing the Absent Directory Browser Argument problem. IIS 5.0 is undoubtedly the way to go for Windows 2000-based Web servers, but it's by no means fully secure without third-party add-ons.

Even what I was able to sniff out at the show regarding the upcoming IIS 6.0 doesn't cut it in terms of security. But what was notable was that Microsoft seemed to be returning to this view as well. IIS 6.0 will allow Microsoft Management Console's IIS snap-in to assign specific third-party crypto services, such as SSL acceleration cards or network-located crypto acceleration engines.

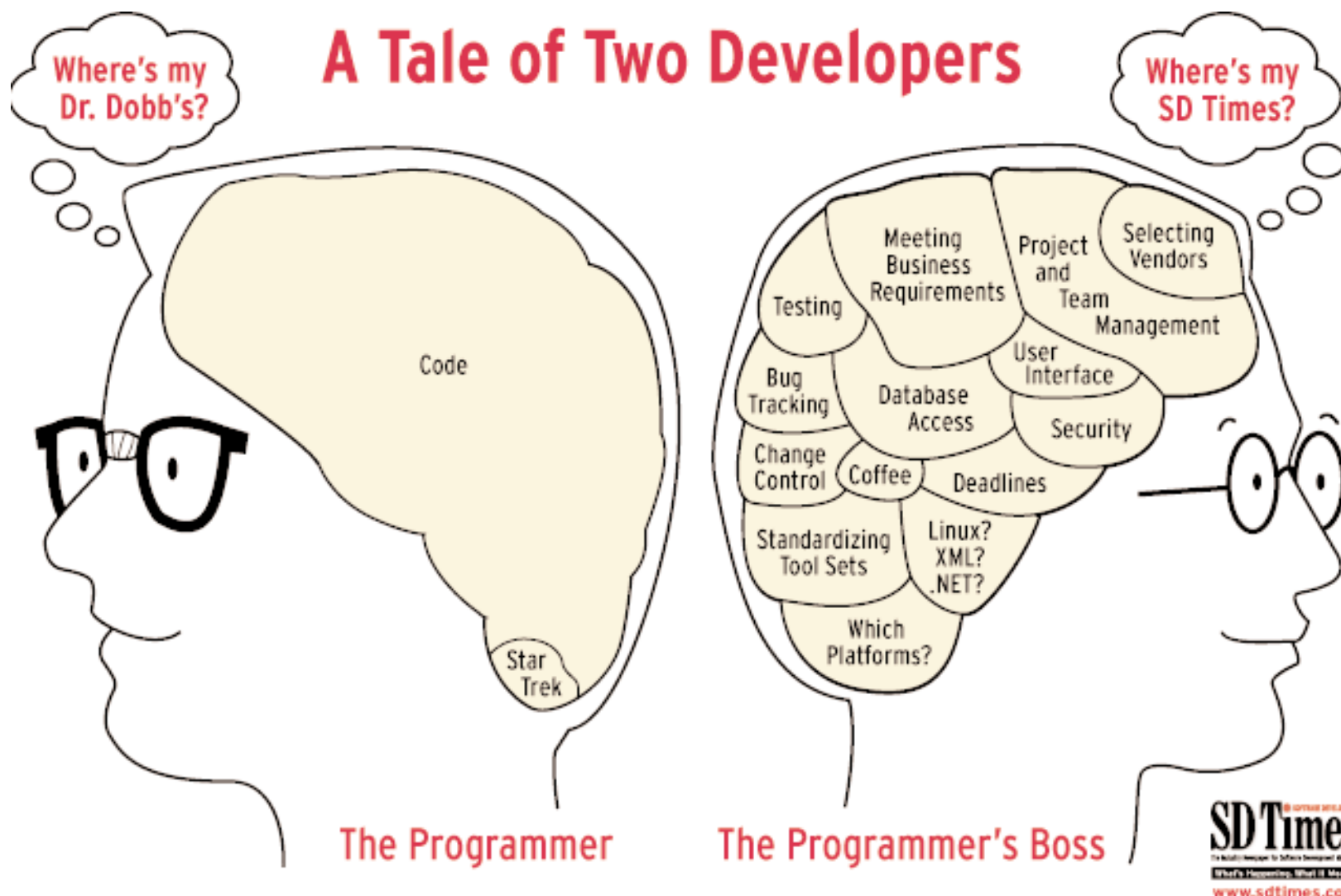
Microsoft used to publicly announce its view that security products were not something it wanted to concentrate upon internally. Only in the past couple of years has the company tried to enter this space on its own, and the results have been far from satisfactory. Given the depth of the Windows platform in the e-commerce arena as well as Microsoft's announced ambitions, I think Redmond would be well served to encourage third-party security product development, and so should Windows developers. ■

Oliver Rist is a freelance technology journalist and vice president of technology at AIC Inc.

WINDOWS WATCH



OLIVER RIST



MDA, MEET MDE

It was a nice enough niche, with a decent enough amount of revenue for a seven-person IT shop in Georgia.

Metanology Inc. came into the world some three years ago as a provider of Internet banking applications, and quickly had three separate products on the market. The group, though, quickly felt the pain of taking 18 months to develop an application targeting certain technology, only to find that the technology grew obsolete during the development phase. So the way Metanology developed the applications evolved into a platform-independent Web development architecture it calls the Meta Development Environment (MDE) that allowed the applications first to be modeled—with 90 percent of the application code generated from the model—and deployment addressed later.

Fast-forward a few years and, unbeknownst to either company, Object Management Group Inc. begins pushing a platform-independent plan of its own, called the Model Driven Architecture (MDA), built on UML, XML Metadata Interchange (XMI) and CORBA middleware. The folks at Metanology then came to realize that they had something far more valuable to offer than their three banking applications.

So for Metanology, the decision to move away from the banking arena and license its development architecture was an easy one. "As architectures get more complex, people will look to simplify the development process," said Todd Fuller, one of the principals and vice president of business development. "The motivation was to separate the application from the platform. There are not very many people, par-

ticularly vendors, driving this, as there is too much money to be made on changing platforms."

Metanology believes the business logic portion of an application is fairly stable, with infrequent changes, while the platform logic is very volatile, as technologies and decisions regarding deployment change often. So creating an architecture that separates business logic from the framework seemed a logical step.

INDUSTRY WATCH



DAVID RUBINSTEIN

Applications are created in platform-independent UML models (PIMs)—for now, MDE supports Rational's Rose modeling tool, although it hopes to support any modeling tool that can generate XMI—then are imported into the MDE. Once there, Metaprograms, a reusable set of programs that hold the platform logic, are activated to generate not only the application, but also other elements, such as user documentation, installation scripts and administration and maintenance documentation. Applications for J2EE and Microsoft DNA can be generated; Fuller said .NET will be a target platform of the Metaprograms once more documentation on the framework becomes available.

One unique element of the MDE, Fuller said, is that development goes directly from the PIM to the platform, skipping the intermediate platform-specific model (PSM) step. "It's not a 'gee-whiz' concept, but no one has really executed it," Fuller said. "I've never understood the point of a PSM. I guess people are more comfortable with it as an interim step because it was easily achievable."

One benefit of this type of application development, Fuller said, is that higher-quality software is developed as more

time is spent making sure the models accurately reflect the applications and developers aren't lured into a rush to create code. With so much of the code being automatically generated, Fuller said, IT organizations can use their senior developers to work on the architectures while the more junior programmers can create the models, saving both time and money. Once the model is complete, the MDE does code generation in batch mode, which Fuller said is less limiting than incremental code generation.

Metanology believes so strongly in its architecture that it is looking to sell off the intellectual property of the banking applications. "It's hard to get traction against a Corillian," Fuller admitted of the Web retail banking application leader. Metanology will target large companies looking to separate business logic from platform logic and create reusable application models.

As to why IT organizations have been slow to adopt model architectures with automatic code generation, Fuller said, "Too many people have been sold too many tools with too many promises" that came up empty. "IT managers just don't trust it."

But Fuller is banking on the fact that once potential customers understand the architecture, they will see that the benefits go far beyond the automatic generation of code. "It's really about the ability to control the architecture, to capture it in Metaprograms and not have to look over the programmers' shoulders anymore."

Metanology still is a seven-person IT shop in Georgia with a decent enough amount of revenue, but by pushing the notion of software development from platform-independent models, it's clear the company has its eyes on a bigger prize. ■

David Rubinstein is executive editor of SD Times.

BUSINESS BRIEFS

WebGain Inc. has decided against going forward with the initial public offering it announced in February, citing "unbalanced market conditions" in a recent statement . . . Several high-technology companies have announced plans to buy back large blocks of their stock in the face of declining share prices and market capitalizations. Among them are **BEA Systems Inc.**, **Red Hat Inc.** and **SilverStream Software Inc.** BEA has authorized a \$100 million repurchase, while SilverStream's repurchase is for \$10 million and Red Hat's is for 10 percent of outstanding shares. The buybacks were announced almost immediately after the U.S. Securities and Exchange Commission lifted some restrictions to that type of purchase after the terrorist attacks on the World Trade Center in New York and the Pentagon outside Washington, D.C. . . . **Evolve Inc.**, an early player in professional services automation, has reached agreement for the placement of \$13 million of convertible preferred stock and warrants for an additional \$13 million from an investor group led by **Warburg Pincus Private Equity VIII, L.P.** The investors believe the concept of workplace optimization, which they say has the benefits of improved project execution, workforce-related expense reduction and the ability to align resources and business strategy, will become widespread in corporate IT departments. Industry analyst Gartner Inc. predicts this market will grow to \$1.5 billion by 2005 . . . **Lifeboat Distribution Services**, the wholesale division of software tools vendor **Programmer's Paradise Inc.**, has entered into a distribution agreement with **Merant International Ltd.** spin-off **Micro Focus** that involves Micro Focus Net Express, a development environment for COBOL applications that takes core business processes and extends them to the Web; Micro Focus Server Express, a deployment platform designed to support high-volume transaction processing applications; Micro Focus Object COBOL Developer Suite, an IDE for Unix and Linux platforms; and Micro Focus Revolve, an application knowledge management tool. ■



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www.sys-con.com/xmledge

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www.msdn.microsoft.com/events/pdc

SIGS Conference For Java Development Oct. 28-31

San Jose, Calif., **101 COMMUNICATIONS LLC**
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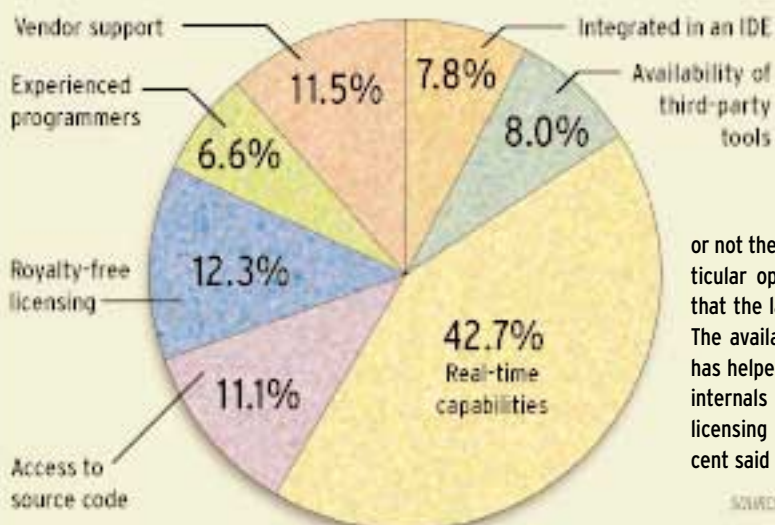
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What's the Most Important Consideration In Selecting an Embedded Operating System?

EVANS DATA WATCH



For embedded systems developers looking to choose an operating system for their applications, the overwhelming majority—almost 43 percent—cite real-time capabilities as the most important factor that goes into their decision, according to the recent Embedded Systems Developer Survey.

The least important consideration is whether or not there are programmers experienced in working with a particular operating system, with a mere 6.6 percent responding that the lack of experienced programmers is an issue for them. The availability of Linux, both royalty-free and as source code, has helped developers satisfy the need to have control over the internals of the operating system. More than 12 percent said licensing was an important consideration, while roughly 11 percent said access to source code was a key factor.

SOURCE: Embedded Systems Developer Survey, Summer 2001, Evans Data Corp.
www.evansdata.com


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